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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,616	10/10/2000	Takashi Hashimoto	198427US2	2258

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EXAMINER

NGUYEN, JIMMY H

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/684,616

Applicant(s)

HASHIMOTO ET AL.

Examiner

Jimmy H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-16 is/are rejected.
- 7) ☒ Claim(s) 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/21/2004 has been entered. Claims 12-18 are currently pending in the application. An action on the RCE follows:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa et al. (USPN: 6,140,984), hereinafter Kanazawa, and further in view of Ryan et al. (USPN: 4,090,109), hereinafter Ryan.

As per claim 12, Kanazawa discloses an AC plasma display panel (see fig. 17) comprising an AC PDP(2) which includes n scan electrodes (Y1-YN electrode 208), m an address electrode (A1-Am address electrodes 209), a plurality of sustain electrodes (X1-XN electrode 207) and nxm discharge cells. Kanazawa further teaches the plurality of sustain electrodes (X) grouped into odd and even groups and by being connected to two second connecting points (see fig. 18). Further, as noting in fig. 20 or 26, Kanazawa teaches the method

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of driving the AC PDP, comprising applying a prescribed voltage ($-V_y$) to one of the scan electrodes (Y/208), another prescribed voltage (V_a) to the address electrode (A/209) and a first voltage (V_x) and a second voltage (0V) to the odd and even sustain electrode groups (i.e., to the two second connecting points as claimed), thereby causing a desired discharge to select an ON state only in a first of the nxm discharge cells (see col. 17, lines 24-53, and col. 20, lines 34-48). Further, as noting in fig. 20 or 26, Kanazawa teaches the first of the nxm discharge cells corresponding to the scan electrode (Y1), the address electrode (A1) and the odd X electrode (e.g., X1), and the second of the nxm discharge cells corresponding to the scan electrode (Y2), the address electrode (A2) and the even X electrode (e.g., X2). Kanazawa does not teach m address electrodes (A/209) connected to m/2 first connecting points in two-to-one correspondence. Accordingly, Kanazawa discloses all the limitations except for m address electrodes (A/209) connected to m/2 first connecting points in two-to-one correspondence, as presently claimed.

However, Ryan discloses a related display device (see fig. 1) comprising (e.g., a case $m=6$) 6 address electrodes (electrodes 36) connected, in two-to-one correspondence, to 3 first connecting points (P1, P2 and P3) of the address driving circuit (a unit including phased shift voltage generator, see fig. 1). It would have been obvious to one skilled in the art at the time of the invention was made to connect m Kanazawa address electrodes, in two-to-one correspondence, to m/2 first connecting points the Kanazawa driving unit, in view of the teaching in the Ryan reference, because this would reduce number of addressing circuits connected to the address electrodes, as taught by Ryan (see col. 1, lines 50-59), thereby obviously reducing the cost of manufacturing the PDP device.

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Regarding to claims 13 and 14, as noting in figs. 25 and 26, Kanazawa further teaches that the first potential difference, $[50V - (-150V) = 200V]$, is larger than the second potential difference, which is substantially equal to zero volt (0V), because the even sustain electrode X is at the ground potential and hence no discharge transition takes place in the pair of the scanning electrode Y and the even sustain electrode X.

Regarding to claim 15, as noting in fig. 20, Kanazawa further teaches that the first voltage (V_x) and the second voltage (0V) applied alternately to the odd and even X electrode groups (i.e., to two second connecting points) in a period when the prescribed voltage ($-V_y$) is applied to the scan electrode (Y).

Regarding to claim 16, as noting in fig. 26, Kanazawa further teaches a step of, in a first addressing period (a period for addressing odd line scan, see fig. 26), applying the first voltage (V_x) and the second voltage (0V) to the odd and even X electrode groups, respectively, and successively applying the prescribed voltage ($-V_y$) to the scan electrode; a step of, after the first addressing period, in a second addressing period (a period for addressing even line scan, see fig. 26), applying the first voltage (V_x) and the second voltage (0V) to the even and odd X electrode groups, respectively, and successively applying the prescribed voltage ($-V_y$) to the scan electrode; a step of applying a prescribed sustain voltage (sustain pulses) to odd and even X electrode groups, after the second addressing period, to cause the sustain discharge.

4. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa, and further in view of Nakayama et al. (USPN: 3,881,129), hereinafter Nakayama.

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As per claim 12, as discussed in the rejection above, Kanazawa discloses all the limitations except for m address electrodes ($A/209$) connected to $m/2$ first connecting points in two-to-one correspondence, as presently claimed.

However, Nakayama discloses a related display device (see fig. 2) comprising (e.g., a case $m=6$) 6 address electrodes (Y column electrodes) connected, in two-to-one correspondence, to 3 first connecting points (SA, SB and SC) of the driving unit (an inherent driving unit supplies the voltages to Y electrodes via terminals SA, SB and SC, fig. 2, col. 3, lines 41-47). It would have been obvious to one skilled in the art at the time of the invention was made to connect m Kanazawa address electrodes, in two-to-one correspondence, to $m/2$ first connecting points the Kanazawa driving unit, in view of the teaching in the Nakayama reference, because this would reduce a number of terminals connected to the electrodes, as taught by Nakayama (col. 1, lines 7-9), thereby obviously reducing the cost of manufacturing the PDP device.

Regarding to claims 13-16, see the rejections above.

Allowable Subject Matter

5. Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: the claimed invention is directed to a method of driving an AC PDP. Dependent claim 17 identifies the uniquely distinct feature, “forming, after said first addressing period, first auxiliary discharge between said n scan electrodes and said m address electrodes in said $n \times m$ discharge cells that belong to said second part of said plurality of sustain electrodes in said first addressing period”.

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The closest arts as discussed above, the Kanazawa reference, further teaching a step of forming, after said first addressing period, an auxiliary sustain discharge in the odd display lines (see fig. 26, col. 20, lines 37-42), and the Ryan or Nakayama reference, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Response to Arguments

7. With respect to new claims 12-18, applicants have argued that the Kanazawa does not teach at least a plurality of sustain electrodes grouped by connected to tow second connecting points and a first voltage and a second voltage applied to the two second connecting points, see page 8, lines 3-6, of the amendment filed on 10/21/2004. Examiner disagrees. Please see the rejections above.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. You (USPN: 6,278,243 B1, see fig. 8) discloses a related AC PDP comprising a plurality of sustain electrodes (X1-Xn), each including left and right portions, respectively, connected to two connecting points, thereby reducing the voltage drop on the X sustain electrodes, so that more exact operation can be performed (see col. 6, lines 7-9).

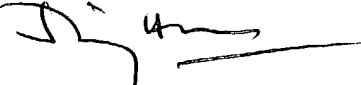
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is (703) 306-5422. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
November 22, 2004



Jimmy H. Nguyen
Primary Examiner
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